

FORM PTO-1449 (Rev. 2-32)	U.S. Department of Commerce Patent and Trademark Office	Atty. Docket No. 02-249-E (400.042)	Serial No. 10/669,841
<b>SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (Use several sheets if necessary)			
			
<b>Applicant:</b> Beigelman et al.			
<b>Filing Date:</b> September 23, 2003		<b>Group:</b> 1632	

## U.S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
/AB/	*	5,985,662		Anderson et al.			
/AB/	*	6,573,099		Graham			

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

/AB/	1.	Hammond et al., "Post-Transcriptional Gene Silencing by Double-Stranded RNA," <i>Nature</i> , 2:110-119 (2001)
/AB/	2.	Sugauchi et al., "Hepatitis B Virus of Genotype B with or without Recombination with Genotype C over the Precore Region plus the Core Gene," <i>Journal of Virology</i> , 76:5985-5992 (2002)

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**U.S. PATENT APPLICATION DOCUMENTS**

Examiner Initial		Document Number	Filing Date	Name	Class	Subclass	Publication Date if Appropriate
/AB/	*	07/882,712	05/14/92	Draper et al.			
	*	08/193,627	02/07/94	Draper et al.			
	*	08/878,640	06/19/97	Ludwig et al.			
	*	09/205,520	12/03/98	Sullenger et al.			
	*	09/257,553	02/24/99	Blatt et al.			
	*	09/274,553	03/23/99	Blatt et al.			
	*	09/436,430	11/09/99	Draper et al.			
	*	09/476,387	12/30/99	Beigelman et al.			
	*	09/504,321	02/15/00	Blatt et al.			
	*	09/531,025	03/20/00	Draper et al.			
	*	09/611,931	07/07/00	Blatt et al.			
	*	09/636,385	08/09/00	Draper et al.			
	*	09/696,347	10/24/00	Draper et al.			
	*	09/740,332	12/18/00	Blatt et al.			
	*	09/817,879	03/26/01	Blatt et al.			
▼	*	09/877,478	06/08/01	Draper et al.			

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/AB/	*	09/877,526	06/08/01	Usman et al.			
	*	09/918,728	07/31/01	Beigelman et al.			
	*	60/082,404	04/20/98	Thompson et al.			
	*	60/083,217	04/27/98	McSwiggen et al.			
	*	60/100,842	09/18/98	Blatt et al.			
	*	60/101,174	09/21/98	Hartmann et al.			
	*	60/296,876	06/08/01	Macejak et al.			
	*	60/337,055	12/05/01	Morrissey et al.			
	*	60/355,059	10/24/01	Macejak et al.			
↓	*	60/358,580	02/20/02	Beigelman et al.			
	*	60/363,124	03/11/02	Beigelman et al.			

**U.S. PATENT DOCUMENTS**

Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
/AB/	*	4,859,768	08/22/89	Suhadolnik et al.			
/AB/	*	4,924,624	05/15/90	Suhadolnik et al.			
/AB/	*	4,987,071	01/22/91	Cech et al.			
/AB/	*	5,188,897	02/23/93	Suhadolnik et al.			

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/AB/	*	5,334,711	08/22/94	Sproat			
	*	5,405,939	04/11/95	Suhadolnik et al.			
	*	5,475,096	12/12/95	Gold et al.			
	*	5,525,468	06/11/96	McSwiggen et al.			
	*	5,550,111	08/27/96	Suhadolnik et al.			
	*	5,556,840	09/17/96	Suhadolnik et al.			
	*	5,567,588	10/22/96	Gold et al.			
	*	5,583,032	12/10/96	Torrence et al.			
	*	5,589,332	12/31/96	Shih et al.			
	*	5,610,054	03/11/97	Draper et al.			
	*	5,624,803	04/29/97	Noonberg et al.			
	*	5,625,047	04/29/97	Been et al.			
	*	5,627,053	05/06/97	Usman et al.			
	*	5,631,359	05/20/97	Chowrira & McSwiggen			
	*	5,633,133	05/27/97	Long et al.			
	*	5,643,889	07/01/97	Suhadolnik et al.			
	*	5,670,633	09/23/97	Cook et al.			
↓	*	5,672,695	09/30/97	Eckstein et al.			
	*	5,700,785	12/23/97	Suhadolnik et al.			

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/AB/	*	5,716,824	02/10/98	Beigelman et al.			
	*	5,741,679	04/21/98	George et al.			
	*	5,792,847	08/11/98	Buhr et al.			
	*	5,807,718	09/15/98	Joyce et al.			
	*	5,817,796	10/06/98	Stinchcomb et al.			
	*	5,834,186	11/10/98	George et al.			
	*	5,849,902	12/15/98	Arrow et al.			
	*	5,854,038	12/29/98	Sullenger and Cech			
	*	5,859,226	01/12/99	Hunt et al.			
	*	5,863,905	01/26/99	Suhadolnik et al.			
	*	5,869,253	02/09/99	Draper et al.			
	*	5,871,914-	02/16/99	Nathan et al.			
	*	5,898,031	04/27/99	Crooke			
	*	5,962,431	10/05/99	Budowsky et al.			
	*	5,989,912	11/23/99	Arrow et al.			
	*	6,001,311	12/14/99	Brennan			
	*	6,005,087	12/21/99	Cook et al.			
	*	6,017,756	01/25/00	Draper et al.			
▼	*	6,107,094	08/22/00	Crooke			

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/AB/	*	6,127,173	12/03/00	Eckstein et al.			
/AB/	*	6,159,714	12/12/00	Usman et al.			
/AB/	*	6,300,074	10/09/01	Gold et al.			
/AB/	*	6,476,205	11/05/02	Buhr et al.			

**FOREIGN PATENT DOCUMENTS**

		Document Number	Date	Country	Class	Subclass	Translation	
							Yes	No
/AB/	1.	EP 0 360 257	03/28/90	EP (Hampel et al.)				
	2.	JP 07231784		JP (Yamada et al.)				
	3.	PCT/US02/09187	03/26/02	WO (Beigelman et al.)				
	4.	WO 91/03162	03/21/91	WO (Rossi et al.)				
	5.	WO 92/07065	04/30/92	WO (Eckstein et al.)				
	6.	WO 93/15187	08/05/93	WO (Usman et al.)				
	7.	WO 93/23057	11/25/93	WO (Sullivan et al.)				
	8.	WO 93/23569	11/25/93	WO (Draper et al.)				
	9.	WO 94/02595	02/03/94	WO (Sullivan et al.)				
	10.	WO 95/04818	02/16/95	WO (Draper et al.)				
▼	11.	WO 95/11304	04/27/95	WO (Usman et al.)				

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/AB/	12.	WO 95/13380	04/27/95	WO (Draper et al.)				
	13.	WO 95/22600	08/24/95	WO (Goldenberg et al.)				
	14.	WO 95/23225	08/31/95	WO (Stinchcomb et al.)				
	15.	WO 96/10390	04/11/96	WO (Ansell et al.)				
	16.	WO 96/10391	04/11/96	WO (Choi et al.)				
	17.	WO 96/10392	04/11/96	WO (Holland et al.)				
	18.	WO 96/18419	06/20/96	WO (Kay et al.)				
	19.	WO 96/18736	06/20/96	WO (Beigelman et al.)				
	20.	WO 96/19577	06/27/96	WO (Collins et al.)				
	21.	WO 96/22689	08/01/96	WO (Pyle et al.)				
	22.	WO 97/08309	03/06/97	WO (Goldenberg et al.)				
	23.	WO 97/26270	07/24/97	WO (Wincott et al.)				
	24.	WO 97/32018	09/04/97	WO (Barber et al.)				
	25.	WO 98/13526	04/02/98	WO (Woolf et al.)				
	26.	WO 98/27104	06/25/98	WO (Breaker et al.)				
	27.	WO 98/28317	07/02/98	WO (Karpeisky et al.)				
	28.	WO 98/43993	10/08/98	WO (Breaker et al.)				
↓	29.	WO 98/58058	12/23/98	WO (Ludwig et al.)				
	30.	WO 99/07409	02/18/99	WO (Deschamps de Paillette)				

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/AB/	31.	WO 99/14226	03/25/99	WO (Wengel et al.)				
	32.	WO 99/16307	04/08/99	WO (Vierling)				
	33.	WO 99/16871	04/08/99	WO (Eckstein et al.)				
	34.	WO 99/20641	04/29/99	WO (Lu)				
	35.	WO 99/29842	06/17/99	WO (Sullenger et al.)				
	36.	WO 99/31262	06/24/99	WO (Barry et al.)				
	37.	WO 99/32619	07/01/99	WO (Fire et al.)				
	374.	WO 99/49029	09/30/99	WO (Graham et al.)				
	375.	WO 99/53050	10/21/99	WO (Waterhouse et al.)				
	38.	WO 99/54459	10/28/99	WO (Thompson et al.)				
	39.	WO 99/55857	11/04/99	WO (Beigelman et al.)				
	376.	WO 99/61631	12/02/99	WO (Heifetz et al.)				
	40.	WO 00/01846	01/13/00	WO (Plaetinck et al.)				
	41.	WO 00/04141	01/27/00	WO (Kao et al.)				
	42.	WO 00/14219	03/16/00	WO (Torrence et al.)				
	43.	WO 00/24931	05/04/00	WO (Nathan and Ellington)				
	44.	WO 00/26226	05/11/00	WO (Breaker et al.)				
	45.	WO 00/44895	08/03/00	WO (Kreutzer et al.)				
▼	46.	WO 00/44914	08/03/00	WO (Li et al.)				

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/AB/	47.	WO 00/53722	09/14/00	WO (O'Hare and Normand)				
/AB/	377.	WO 00/63364	10/26/00	WO (Pachuk et al.)				
/AB/	48.	WO 00/66604	11/09/00	WO (Wengel et al.)				
/AB/	49.	WO 01/29058	10/13/01	WO (Mello and Fire)				
/AB/	50.	WO 01/36646	05/25/01	WO (Zernicka-Goetz et al.)				

**OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)**

/AB/	51.	Abramovitz et al., "Catalytic Role of 2'-Hydroxyl Groups Within a Group II Intron Active Site," <i>Science</i> 271:1410-1413 (1996)
	52.	Akhtar and Juliano, "Cellular Uptake and Intracellular Fate of AntiSense Oligonucleotides," <i>Trends Cell Biol.</i> 2:139-144 (1992)
	53.	Aldrian-Herrada et al., "A peptide nucleic acid (PNA) is more rapidly internalized in cultured neurons when coupled to a <i>retro-inverso</i> delivery peptide. The antisense activity depresses the target mRNA and protein in magnocellular oxytocin neurons," <i>Nucleic Acids Research</i> 26:4910-4916 (1998)
	54.	Alter, "Chronic Consequences of Non-A, Non-B Hepatitis," <i>Current Perspectives in Hepatology</i> , pp. 83-89 (1989)
	55.	Baenziger and Fiete, "Galactose and N-Acetylgalactosamine-Specific Endocytosis of Glycopeptides by Isolated Rat Hepatocytes," <i>Cell</i> 22:611-620 (1980)
	56.	Banerjee and Turner, "The Time Dependence of Chemical Modification Reveals Slow Steps in the Folding of a Group I Ribozyme," <i>Biochemistry</i> 34:6504-6512 (1995)
	57.	Bartel and Szostak, "Isolation of New Ribozymes from a Large Pool of Random Sequences," <i>Science</i> 261:1411-1418 (1993)
▼	58.	Bass, "The short answer," <i>Nature</i> 411:428-429 (2001)

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/AB/	59.	Beaucage and Iyer, "The Functionalization of Oligonucleotides Via Phosphoramidite Derivatives," <u>Tetrahedron</u> 49:1925-1963 (1993)
	60.	Beaudry and Joyce, "Directed Evolution of an RNA Enzyme," <u>Science</u> 257:635-641 (1992)
	61.	Beck and Nassal, "Efficient hammerhead ribozyme-mediated cleavage of the structured hepatitis B virus encapsidation signal <i>in vitro</i> and in cell extracts, but not in intact cells," <u>Nucleic Acids Res.</u> , 23(24), 4954-62 (1995)
	62.	Beigelman et al., "Chemical Modification of Hammerhead Ribozymes," <u>The Journal of Biological Chemistry</u> 270:25702-25708 (1995)
	63.	Bellon et al., "Amino-Linked Ribozymes: Post-Synthetic Conjugation of Half-Ribozymes," <u>Nucleosides &amp; Nucleotides</u> 16:951-954 (1997)
	64.	Bellon et al., "Post-synthetically Ligated Ribozymes: An Alternative Approach to Iterative Solid Phase Synthesis," <u>Bioconjugate Chem.</u> 8:204-212 (1997)
	65.	Bernstein et al., "Role for a Bidentate Ribonuclease in the Initiation Step of RNA Interference," <u>Nature</u> 409:363-366 (2001)
	66.	Berzal-Herranz et al., "Essential nucleotide sequences and secondary structure elements of the hairpin ribozyme," <u>EMBO J.</u> 12:2567-2574 (1993)
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	68.	Bevilacqua et al., "A Mechanistic Framework for the Second Step of Splicing Catalyzed by the <i>Tetrahymena</i> Ribozyme," <u>Biochemistry</u> 35:648-568 (1996)
	69.	Boado et al., "Drug Delivery of Antisense Molecules to the Brain for Treatment of Alzheimer's Disease and Cerebral AIDS," <u>Journal of Pharmaceutical Sciences</u> 87:1308-1315 (1998)
↓	70.	Boado, "Antisense drug delivery through the blood-brain barrier," <u>Advanced Drug Delivery Reviews</u> 15:73-107 (1995)

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/AB/	71.	Bock et al., "The Enhancer I Core Region Contributes to the Replication Level of Hepatitis B Virus In Vivo and In Vitro," <i>Jour. of Virology</i> 74:2193-2202 (2000)
	72.	Borden, "Interferons—Expanding Therapeutic Roles," <i>The New England Journal of Medicine</i> 326(22):1491-1493 (1992)
	73.	Breaker and Joyce, "Inventing and improving ribozyme function: rational design versus iterative selection methods," <i>TIBTECH</i> 12:268-275 (1994)
	74.	Breaker et al., "A DNA enzyme with Mg <sup>2+</sup> -dependent RNA phosphoesterase activity," <i>Chemistry &amp; Biology</i> 2(10):655-660 (1995)
	75.	Breaker, "Are engineered proteins getting competition from RNA?" <i>Current Opinion in Biotechnology</i> 7:442-448 (1996)
	76.	Breaker, "Catalytic DNA: in training and seeking employment," <i>Nature Biotechnology</i> 17:422-423 (1999)
	77.	Brennan et al., "Two-Dimensional Parallel Array Technology as a New Approach to Automated Combinatorial Solid-Phase Organic Synthesis," <i>Biotechnology and Bioengineering (Combinatorial Chemistry)</i> 61:33-45 (1998)
	78.	Brody and Gold, "Aptamers as therapeutic and diagnostic agents," <i>Reviews in Molecular Biotechnology</i> 74:5-13 (2000)
	79.	Brown et al., "Secondary structure of the 5' nontranslated regions of hepatitis C virus and pestivirus genomic RNAs," <i>Nucleic Acids Research</i> 20:5041-5045 (1992)
	80.	Burgin et al., "Chemically Modified Hammerhead Ribozymes with Improved Catalytic Rates," <i>Biochemistry</i> 35:14090-14097 (1996) (volume no. mistakenly listed as 6)
	81.	Burke et al., "Structural Analysis and Modifications of the Hairpin Ribozyme," <i>Nucleic Acids and Molecular Biology</i> , edited by Eckstein and Lilley, Springer-Verlag Berlin Heidelberg, 10:129-143 (1996)
▼	82.	Burlina et al., "Chemical Engineering of RNase Resistant and Catalytically Active Hammerhead Ribozymes," <i>Bioorganic &amp; Medicinal Chemistry</i> 5:1999-2010 (1997)

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/AB/	83.	Caruthers et al., "Chemical Synthesis of Deoxyoligonucleotides and Deoxyoligonucleotide Analogs," <u>Methods in Enzymology</u> 211:3-19 (1992)
	84.	Cech et al., "Representation of the secondary and tertiary structure of group I introns," <u>Nature Structural Biology</u> 1:273-280 (1994)
	85.	Cech, "Ribozymes and Their Medical Implications," <u>JAMA</u> 260:3030-3034 (1988)
	86.	Chartrand et al., "An oligodeoxyribonucleotide that supports catalytic activity in the hammerhead ribozyme domain," <u>Nucleic Acids Research</u> 23(20):4092-4096 (1995)
	87.	Charubala and Pfleiderer, "Chemical Synthesis of 2',5'-Oligoadenylate Analogues," <u>Progress in Molecular and Subcellular Biology</u> 14:114-138 (1994)
	88.	Chebath & Revel, "The 2-5 A System: 2-5 A Synthetases, Isospecies and Functions," <u>Interferon: Principles and Medical Applications</u> pp225-236 (1992)
	89.	Chen et al., "Multitarget-Ribozyme Directed to Cleave at up to Nine Highly Conserved HIV-1 env RNA Regions Inhibits HIV-1 Replication-Potential Effectiveness Against Most Presently Sequenced HIV-1 Isolates," <u>Nucleic Acids Research</u> 20:4581-4589 (1992)
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